

# Radio Test Report

Report No.: CTA231102009H01

Issued for

Zhejiang Hyxi Technology Co., Ltd.

9-10F, Building 3, Jiuyao Commercial Center, Zhuantang  
Street, Xihu District, Hangzhou, Zhejiang, China

Product Name: Hyxi DMU

Brand Name: N/A

Model Name: Hyxi DMU WIFI

Series Model(s): N/A

FCC ID: 2BDBN-DMUWIFIG1

Test Standard: FCC 47CFR §2.1091

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from CTA, all test data presented in this report is only applicable to presented test sample.



## TEST REPORT

**Applicant's Name**.....: Zhejiang Hyxi Technology Co., Ltd.  
**Address**.....: 9-10F, Building 3, Jiuyao Commercial Center, Zhuantang Street,  
Xihu District, Hangzhou, Zhejiang, China  
**Manufacturer's Name**.....: Zhejiang Hyxi Technology Co., Ltd.  
**Address**.....: 9-10F, Building 3, Jiuyao Commercial Center, Zhuantang Street,  
Xihu District, Hangzhou, Zhejiang, China

**Product Description**

**Product Name**.....: Hyxi DMU  
**Brand Name**.....: N/A  
**Model Name**.....: Hyxi DMU WIFI  
**Series Model(s)**.....: N/A

**Test Standards**.....: FCC 47CFR §2.1091  
447498 D01 Interim General RF Exposure Guidance v06

This report shall not be reproduced except in full, without the written approval of CTA, this document only be altered or revised by CTA, personal only, and shall be noted in the revision of the document.

**Date of Test**.....:

**Date of receipt of test item**.....: 20 Oct. 2023  
**Date (s) of performance of tests**.....: 20 Oct. 2023 ~ 30 Oct. 2023  
**Date of Issue**.....: 30 Oct. 2023  
**Test Result**.....: Pass

Testing Engineer :

*Zoey Cao*

(Zoey Cao)

Technical Manager :

*Amy Wen*

(Amy Wen)

Authorized Signatory :

*Eric Wang*

(Eric Wang)

## TABLE OF CONTENTS

<b>1. GENERAL INFORMATION</b>	<b>5</b>
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST FACTORY	6
<b>2. FCC 47CFR §2.1091 REQUIREMENT</b>	<b>7</b>
2.1 TEST STANDARDS	7
2.2 LIMIT	7
2.3 TEST RESULT	8

**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	30 Oct. 2023	CTA231102009H01	ALL	Initial Issue

## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Hyxi DMU	
Brand Name	N/A	
Model Name	Hyxi DMU WIFI	
Series Model(s)	N/A	
Model Difference	N/A	
Product Description	The EUT is Hyxi DMU	
	Operation Frequency:	433.35MHz-434.6 MHz 802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz
	Modulation Type:	FSK 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	2.4G WIFI:3.3 dBi 433.35MHz: 0.5 dBi
	Antenna Designation:	433.35MHz:Spring Antenna 2.4G WIFI: PCB Antenna
Power Rating	Input: AC 100~240V, 50/60Hz Output: DC 12V/1A	
Hardware Version	V1.0	
Software Version	V01.00.02	

## 1.2 TEST FACTORY

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

FCC test Firm Registration Number: 517856

IC test Firm Registration Number: 27890

A2LA Certificate No.: 6534.01

IC CAB ID: CN0127

## 2. FCC 47CFR §2.1091 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

## 2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
SRD	AV	-51±1dBm
2.4G WLAN	AV	10±1dBm

Protocol	Fre. (GHz)	Separation distance (cm)	Max Turn up power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max ERP (dBm)	Max EIRP (W)	Limit (W/)	Ratio	Result
SRD	0.43335	20	-50	0.5	-49.5	-51.65	0.00000001	0.2219	0.00000003	Pass
2.4G WLAN	2.462	20	11	3.3	14.3	12.15	0.016	0.7680	0.02136185	Pass

**Multiple transmission:**

$$\text{SRD+WLAN}=0.00000003+0.0214=0.02136188<1$$

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

$$2. \text{ERP} = \text{EIRP} - 2.15$$

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*